

IN THE CLAIMS

Claims 2, 4, 5, 7, 8, 11 - 12, 16, 19, and 26 - 30 have been amended. Claims 21 - 24 have been cancelled.

1. (original) A method, comprising:
receiving a plurality of packets;
classifying the packets according to a classification criterion;
sending a packet bundle to a host wherein the packet bundle is generated using packets that are uniformly classified with respect to the classification criterion; and
receiving the packet bundle and the corresponding packet bundle descriptor; and
processing the packet bundle according to the corresponding packet bundle descriptor.

2. (currently amended) The method according to claim 1, wherein said sending comprises:

determining the packet bundle for transfer according to a pre-determined criterion;
generating the packet bundle and its corresponding packet bundle descriptor;
and

~~transferring~~ transferring the packet bundle and its corresponding packet bundle descriptor to the host.

3. (original) The method according to claim 2, wherein:
the classification criterion includes a session number; and
the pre-determined criterion includes a priority associated with a packet.

4. (currently amended) A method for an input and output controller, comprising:

receiving a plurality of packets;
classifying the packets according to a classification criterion; and
sending a packet bundle to a host wherein the packet bundle ~~is generated using~~
includes a number of packets that are uniformly classified with respect to the
classification criterion..

5. (currently amended) The method according to claim 4, wherein said sending
~~comprises~~ includes:

determining the packet bundle for transfer according to a pre-determined
criterion;

generating the packet bundle and its corresponding packet bundle descriptor;
and

transferring the packet bundle and its corresponding packet bundle descriptor to
the host.

6. (original) The method according to claim 5, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

7. (currently amended) A method for a classification based packet transferring
mechanism, comprising:

classifying the packets according to a classification criterion; and

sending a packet bundle to a host wherein the packet bundle ~~is generated using~~
includes a number of packets that are uniformly classified with respect to the
classification criterion.

8. (currently amended) The system according to claim 7, wherein said sending

~~comprises~~ includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and its corresponding packet bundle descriptor;
and

~~transferring~~ transferring the packet bundle and its corresponding packet bundle descriptor to the host.

9. (original) The method according to claim 8, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

10. (original) The method according to claim 9, wherein the packet bundle descriptor includes:

a bundle descriptor providing information about the packet bundle; and

at least one packet descriptor each of which provides information about a packet in the packet bundle.

11. (currently amended) ~~The method according to claim 10,~~ A method for a classification based packet transferring mechanism, comprising:

classifying the packets according to a classification criterion; and

sending a packet bundle to a host wherein the packet bundle is generated using packets that are uniformly classified with respect to the classification criterion,

said sending including determining the packet bundle for transfer according to a pre-determined criterion, generating the packet bundle and its corresponding packet bundle descriptor, and transferring the packet bundle and its corresponding packet

bundle descriptor to the host, the classification criterion including a session number, the pre-determined criterion including a priority associated with a packet, the packet bundle descriptor including a bundle descriptor providing information about the packet bundle and at least one packet descriptor, each of which provides information about a packet in the packet bundle, and wherein-said bundle descriptor includes including at least some of a number of packets in the packet bundle[:]], a session number identifying the session information of the packets in the packet bundle[:]], and a priority value specifying the priority of the packet bundle.

12. (currently amended) ~~The method according to claim 10,~~

A method for a classification based packet transferring mechanism, comprising:
classifying the packets according to a classification criterion; and
sending a packet bundle to a host wherein the packet bundle is generated using packets that are uniformly classified with respect to the classification criterion,
said sending including determining the packet bundle for transfer according to a pre-determined criterion, generating the packet bundle and its corresponding packet bundle descriptor, and transferring the packet bundle and its corresponding packet bundle descriptor to the host, the classification criterion including a session number, the pre-determined criterion including a priority associated with a packet, the packet bundle descriptor including a bundle descriptor providing information about the packet bundle and at least one packet descriptor, each of which provides information about a packet in the packet bundle, wherein and each of the packet descriptors includes including at least some of[:]] a packet status[:]], a packet length[:]], a buffer address for the packet in the packet bundle[:]], and an out-of-order marking of the packet.

13. (original) A method for a host, comprising:
receiving a packet bundle and its corresponding packet bundle descriptor;
processing the packet bundle; and
updating a packet session using the packet bundle according to the packet bundle descriptor.

14. (original) The method according to claim 13, further comprising:
identifying a session number from the packet bundle descriptor prior to said updating.

15. (original) A system, comprising:
an input and output controller with a classification based packet transferring mechanism for receiving packets and transferring a packet bundle with its corresponding packet bundle descriptor; and
a host for receiving the packet bundle and its corresponding packet bundle descriptor and for updating a session using the packet bundle based on the packet bundle descriptor.

16. (currently amended) ~~The system according to claim 15,~~ A system,
comprising:
an input and output controller with a classification based packet transferring
mechanism for receiving packets and transferring a packet bundle with its
corresponding packet bundle descriptor; and
a host for receiving the packet bundle and its corresponding packet bundle
descriptor and for updating a session using the packet bundle based on the packet
bundle descriptor,

wherein the classification based packet transferring mechanism ~~comprises~~
includes:

- a packet classification mechanism for classifying received packets;
- a packet grouping mechanism for generating the packet bundle using classified packets and the corresponding packet bundle descriptor; and
- a transfer scheduler for transferring, at a time determined based on a pre-determined criterion, the packet bundle and the corresponding packet bundle descriptor to the host.

17. (original) The system according to claim 16, wherein the host comprises:

- a notification handler for receiving the packet bundle and its corresponding packet bundle descriptor;
- a packet bundle processing mechanism for processing the received packet bundle and the corresponding packet bundle descriptor; and
- a session updating mechanism for updating a session using the packet bundle according to the packet bundle descriptor.

18. (original) An input and output controller, comprising:

- a packet receiver for receiving at least one packet; and
- a classification based packet transferring mechanism for generating and transferring a packet bundle and its corresponding packet bundle descriptor to a host.

19. (currently amended) ~~The controller according to claim 18, An input and output controller, comprising the classification based packet transferring mechanism~~
~~comprises~~:

a packet receiver for receiving at least one packet; and

a classification based packet transferring mechanism for generating and transferring a packet bundle and its corresponding packet bundle descriptor to a host, wherein the classification based packet transferring mechanism includes:

- a packet classification mechanism for classifying received packets;
- a packet grouping mechanism for generating the packet bundle based on classified packets and the corresponding packet bundle descriptor; and
- a transfer scheduler for transferring, at a time determined based on a pre-determined criterion, the packet bundle and its corresponding packet bundle descriptor to the host.

20. (original) The controller according to claim 19, further comprising:

- a packet queue for buffering the received at least one packet; and
- a packet queue allocation mechanism for allocating the packet queue prior to said receiving the at least one packet.

Claims 21 - 24 (cancelled).

25. (original) A machine-accessible medium encoded with data, the data, when accessed, causing:

- receiving a plurality of packets;
- classifying the packets according to a classification criterion;
- sending a packet bundle to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion; and
- receiving the packet bundle and the corresponding packet bundle descriptor; and
- processing the packet bundle according to the corresponding packet bundle descriptor.

26. (currently amended) The medium according to claim 25, wherein said sending ~~comprises~~ includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and its corresponding packet bundle descriptor;
and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

27. (currently amended) A machine-accessible medium encoded with data for input and output control, the data, when accessed, causing:

receiving a plurality of packets;

classifying the packets according to a classification criterion; and

sending a packet bundle to a host wherein the packet bundle ~~is generated using~~ includes a number of packets that are uniformly classified with respect to the classification criterion.

28. (currently amended) The medium according to claim 27, wherein said sending ~~comprises~~ includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and its corresponding packet bundle descriptor;
and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

29. (currently amended) A machine-accessible medium encoded with data for a classification based packet transferring mechanism, the data, when accessed, causing:

- classifying the packets according to a classification criterion; and
- sending a packet bundle to a host wherein the packet bundle ~~is generated using~~ includes a number of packets that are uniformly classified with respect to the classification criterion.

30. (currently amended) The medium according to claim 29, wherein said sending ~~comprises~~:

- determining the packet bundle for transfer according to a pre-determined criterion;

- generating the packet bundle and its corresponding packet bundle descriptor;

and

- transferring the packet bundle and its corresponding packet bundle descriptor to the host.

31. (original) A machine-accessible medium encoded with data for a host, the data, when accessed, causing:

- receiving a packet bundle and its corresponding packet bundle descriptor;

- processing the packet bundle; and

- updating a packet session using the packet bundle according to the packet bundle descriptor.

32. (original) The medium according to claim 31, the data, when accessed, further causing:

- identifying a session number from the packet bundle descriptor prior to said

updating.